



UNITED STATES PATENT AND TRADEMARK OFFICE

m

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/763,584	01/23/2004	Daniel Yu-Kwong Ng	2705-744	7733
20575 7590 05/22/2007 MARGER JOHNSON & MCCOLLOM, P.C. 210 SW MORRISON STREET, SUITE 400 PORTLAND, OR 97204			EXAMINER ALAM, UZMA	
			ART UNIT 2157	PAPER NUMBER
			MAIL DATE 05/22/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/763,584	NG ET AL.	
	Examiner	Art Unit	
	Uzma Alam	2157	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 January 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-22 is/are rejected.
- 7) ☒ Claim(s) 8 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

This action is responsive to the application filed on January 23, 2004. Claims 1-21 are pending. Claims 1-21 represent a method for sampling packets in a network.

Claim Objections

1. Claim 8 objected to because of the following informalities: There are some missing words in the claim. Appropriate correction is required.

Claim Rejections - 35 USC § 101

1. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 16-21 rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Claims 16-21 claim a computer readable medium. This claimed subject matter lacks a practical application of a judicial exception (law of nature, abstract idea, naturally occurring article/phenomenon) since it fails to produce a useful, concrete and tangible result.

Specifically, the claimed subject matter does not produce a tangible result because the claimed subject matter fails to produce a result that is limited to having real world value rather than a result that may be interpreted to be abstract in nature as, for example, a thought, a computation, or manipulated data.

More specifically, the claimed subject matter provides for a computer readable medium. This produced result remains in the abstract and, thus, fails to achieve the required status of having real world value.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 13, 14 and 21 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
4. Claims 13, 14 and 21 recite the limitation "linear shift feedback register" in claims 10 and 20. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1, 8-11, 15, 16, 18-20 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Duffield et al. US Patent No. 6,873,600 in view of Blachman et al. US Patent No. 4,472,784. Duffield teaches the invention as claimed including a method for sampling

Art Unit: 2157

network traffic (see abstract). Blachman teaches the method for pseudo-randomly shuffling indexes (see abstract).

As per claim 1, Duffield teaches a method for sampling packets in a network, comprising:
determining a first number of packets to be sampled from a second number of packets
(from a the sum of all packets in a traffic flow, sampling a random number of packets; column 8, lines 51-60; column 9, lines 11-46; column 15, lines 50-67; Figure 5b; column 16, lines 1-10);
randomly shuffling a packet index order corresponding to said second number of packets
(packet index; column 7, lines 50-51);
sampling a packet based on a randomly shuffled packet index (column 9, lines 11-41).

Duffield does not expressly teach pseudo-randomly shuffling the packet index.

Blachmann teaches pseudo randomly shuffling a packet index. See column 8, lines 63-67.

It would have been obvious to a person of ordinary skill in the art at the time of the invention to combine the randomly shuffling of Duffield with the pseudo randomly shuffling of Blachmann. A person of ordinary skill in the art would have been motivated to do this because Duffield teaches that the labels (packet index) are only collected from a pseudorandom subset of all the packets traversing the domain (see column 8, lines 63-65).

As per claim 8, Duffield and Blachman teach the method of Claim 1. Duffield does not teach wherein a pseudo-random shuffle function with a one-to-one mapping and no overlap is used to perform said pseudo-randomly shuffling. Blachman teaches wherein a pseudo-random

Art Unit: 2157

shuffle function with a one-to-one mapping and no overlap is used to perform said pseudo-randomly shuffling. See column 4, lines 22-60; column 5, lines 4-54.

It would have been obvious to a person of ordinary skill in the art at the time of the invention to combine the randomly shuffling of Duffield with the pseudo randomly shuffling of Blachmann. A person of ordinary skill in the art would have been motivated to do this because Duffield teaches that the labels (packet index) are only collected from a pseudorandom subset of all the packets traversing the domain (see column 8, lines 63-65).

As per claim 9, Duffield and Blachman teach the method of Claim 8, wherein said pseudo-random shuffle function is implemented in either hardware or software (Figure 11).

As per claim 10 Duffield teaches apparatus for sampling packets comprising: logic for selecting n-out-of-N packet for sampling, wherein a packet index is randomly shuffled. Duffield does not teach pseudo randomly shuffling from a the sum of all packets in a traffic flow, sampling a random number of packets; column 8, lines 51-60; column 9, lines 11-46; column 15, lines 50-67; Figure 5b; column 16, lines 1-10; packet index; column 7, lines 50-51).

Blachman teaches pseudo randomly shuffling. See column 8, lines 63-67.

It would have been obvious to a person of ordinary skill in the art at the time of the invention to combine the randomly shuffling of Duffield with the pseudo randomly shuffling of Blachmann. A person of ordinary skill in the art would have been motivated to do this because

Art Unit: 2157

Duffield teaches that the labels (packet index) are only collected from a pseudorandom subset of all the packets traversing the domain (see column 8, lines 63-65).

As per claim 11, Duffield and Blachman teach the apparatus of Claim 10. Duffield does not teach wherein said logic performs a shuffle function with a one-to-one mapping and no overlap. Blachman teaches wherein said logic performs a shuffle function with a one-to-one mapping and no overlap. See column 4, lines 22-60; column 5, lines 4-54.

It would have been obvious to a person of ordinary skill in the art at the time of the invention to combine the randomly shuffling of Duffield with the pseudo randomly shuffling of Blachmann. A person of ordinary skill in the art would have been motivated to do this because Duffield teaches that the labels (packet index) are only collected from a pseudorandom subset of all the packets traversing the domain (see column 8, lines 63-65).

As per claim 15, Duffield and Blachman teach the apparatus of Claim 10 further comprising:

a circuit coupled to said logic for partitioning N into Y groups equal to a largest power of two which is smaller than or equal to N (Duffield; column 12, lines 1-39)

a selector for selecting n or (N - n) groups (column 12, lines 1-39).

7. Claims 2, 6, 7, 12-14, 17 and 21 rejected under 35 U.S.C. 103(a) as being unpatentable over Duffield et al. US Patent No. 6,873,600 in view of Blachman et al. US Patent No. 4,472,784

Art Unit: 2157

as applied to claims 1, 8-11 and 15 above, and further in view of Russell US Patent No. 3,761,696. Russell teaches a liner shift feedback register.

As per claims 2 and 12, Duffield and Blachman teach the method and apparatus of Claims 1 and 10. Duffield and Blachman do not teach wherein said pseudo-randomly shuffling is performed by a linear feedback shift register. Russell teaches a linear feedback shift register. See column 2, lines 6-11. It would have been obvious to a person of ordinary skill in the art at the time of the invention to combine the hardware of Duffield and Blachman with the liner shift feedback register of Russell. A person of ordinary skill in the art would have been motivated to do this to provide the pseudorandomly shuffling utilized by Duffield because the combination of linear shift feedback registers makes a pseudo random number generator (column 8, lines 63-65).

As per claim 3, Duffield and Blachman and Russell teach the method of Claim 2, wherein said second number of packets is a power of two (Duffield column 8, lines 51-60).

As per claim 4, Duffield, Blachman and Russell teach the method of Claim 2, wherein said second number of packets is any positive integer number (Duffield; column 11, lines 65-67).

As per claim 5, Duffield, Blachman and Russell teach the method of Claim 4 further comprising: partitioning said second number of packets into a plurality of groups equal to a largest power of two which is smaller than or equal to said second number of packets; selecting a number from said plurality of groups for determining sampling (Duffield column 12, lines 1-39).

As per claim 6, Duffield, Blachman and Russell teach the method of Claim 5 comprising determine which of said plurality of groups contains at least two numbers (column 12, lines 1-39).

Duffield and Blachman do not teach further comprising using a linear feedback shift register. Russell teaches a linear feedback shift register. See column 2, lines 6-11. It would have been obvious to a person of ordinary skill in the art at the time of the invention to combine the hardware of Duffield and Blachman with the liner shift feedback register of Russell. A person of ordinary skill in the art would have been motivated to do this to provide the pseudorandomly shuffling utilized by Duffield because the combination of linear shift feedback registers makes a pseudo random number generator (column 8, lines 63-65).

As per claim 7, Duffield, Blachmand and Russell teach the method of Claim 2. Duffield and Blachman do not teach further comprising using a counter or a pseudo-random number generator. Russell teaches a pseudo-random number generator. See column 2, lines 6-11. It would have been obvious to a person of ordinary skill in the art at the time of the invention to combine the hardware of Duffield and Blachman with the liner shift feedback register of Russell. A person of ordinary skill in the art would have been motivated to do this to provide the pseudorandomly shuffling utilized by Duffield because the combination of linear shift feedback registers makes a pseudo random number generator (column 8, lines 63-65).

As per claim 13, Duffield and Blachman teach the apparatus of Claim 10, wherein said register performs a shuffle function when N is a power of two. See Column 8, lines 51-60.

Duffield and Blachman do not teach wherein said pseudo-randomly shuffling is performed by a linear feedback shift register. Russell teaches a linear feedback shift register. See column 2, lines 6-11.

It would have been obvious to a person of ordinary skill in the art at the time of the invention to combine the hardware of Duffield and Blachman with the linear shift feedback register of Russell. A person of ordinary skill in the art would have been motivated to do this to provide the pseudorandomly shuffling utilized by Duffield because the combination of linear shift feedback registers makes a pseudo random number generator (column 8, lines 63-65).

As per claim 14 Duffield and Blachman teach the apparatus of Claim 10, wherein said register performs a shuffle function when N is any positive integer value. See column 11, lines 65-67. Duffield and Blachman do not teach wherein said pseudo-randomly shuffling is performed by a linear feedback shift register. Russell teaches a linear feedback shift register. See column 2, lines 6-11.

It would have been obvious to a person of ordinary skill in the art at the time of the invention to combine the hardware of Duffield and Blachman with the linear shift feedback register of Russell. A person of ordinary skill in the art would have been motivated to do this to provide the pseudorandomly shuffling utilized by Duffield because the combination of linear shift feedback registers makes a pseudo random number generator (column 8, lines 63-65).

Art Unit: 2157

As per claim 17, Duffield and Blachman teach the computer-readable medium of Claim 16, wherein said pseudo-randomly shuffling is performed by a linear feedback shift register. Duffield and Blachman do not teach wherein said pseudo-randomly shuffling is performed by a linear feedback shift register. Russell teaches a linear feedback shift register. See column 2, lines 6-11. It would have been obvious to a person of ordinary skill in the art at the time of the invention to combine the hardware of Duffield and Blachman with the liner shift feedback register of Russell. A person of ordinary skill in the art would have been motivated to do this to provide the pseudorandomly shuffling utilized by Duffield because the combination of linear shift feedback registers makes a pseudo random number generator (column 8, lines 63-65).

As per claim 21, Duffield and Blachman teach the computer-readable medium of Claim 20, wherein a register is used to determine which of said plurality of groups contains at least two numbers. (column 12, lines 1-39).

Duffield and Blachman do not teach further comprising using a linear feedback shift register. Russell teaches a linear feedback shift register. See column 2, lines 6-11. It would have been obvious to a person of ordinary skill in the art at the time of the invention to combine the hardware of Duffield and Blachman with the liner shift feedback register of Russell. A person of ordinary skill in the art would have been motivated to do this to provide the pseudorandomly shuffling utilized by Duffield because the combination of linear shift feedback registers makes a pseudo random number generator (column 8, lines 63-65).

Art Unit: 2157

Claims 16, 18, 19, 20 and 22 are rejected under the same rationale as claims 1, 3, 4, 5 and 8 because they teach the computer readable medium having stored thereon instructions for the method of claims 1, 3, 4, 5 and 8.

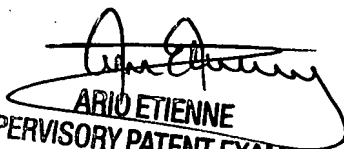
Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Uzma Alam whose telephone number is (571) 272-3995. The examiner can normally be reached on Monday-Tuesday 5:30 AM - 2:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ario Etienne can be reached on (571) 272-4001. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Uzma Alam
Ua
April 27, 2007


ARIO ETIENNE
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100